

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1. (Currently Amended) A method for manufacturing multimaterial parts, the multimaterial used in the method containing a tough ferrous (Fe > 50 wt. %) material component (B) in a desired distribution with a hard, wear-resistant material (A), in which method a green body is prepared from the tough material component (B) and the hard material component (A) by isostatic hot pressing into a substantially densified green body, ~~characterized in that~~ wherein the green body is hot worked up to a hot working degree 2 minimum so as to obtain a desired distribution between the tough material component (B) and the hard material component (A), and the working degree is determined from the cross-sectional areas of the body prior to and after hotworking.

Claim 2. (Currently Amended) The method of claim 1, ~~characterized in that~~ wherein the wear-resistant component (A) and the tough component (B) may be in either powderized, partially densified or entirely solid state prior to starting the densification of the green body.

Claim 3. (Currently Amended) The method of claim 1 ~~or 2, characterized in that~~ wherein the wear-resistant component (A) is a ferrous material (Fe > 50 wt. %) or, alternatively, a mixture of a ferrous material and a ceramic material (carbide,

oxide, nitride, boride, etc.) containing not more than 30 wt. % of a metallic binder, whereby the hardness of the material is greater than HRC 35, ~~advantageously greater than HRC 50.~~

Claim 4. (Currently Amended) The method of ~~any one of claims 1-3,~~ **characterized in that claim 1, wherein** the tough material component (B) is a ferrous (Fe > 50 wt. %) or nickel (Ni > 50 wt. %) based material, whereby the hardness of the material is not greater than HRC 35, ~~advantageously not greater than HRC 25.~~

Claim 5. (Currently Amended) The method of ~~any one of claims 1-4,~~ **characterized in that claim 1, wherein** the wear-resistant material component (A) is prepared from a powderized raw material in which the chemical composition of the ferrous metallic powder (Fe > 50 wt. %) in the powderized mixture is 0.5-3.5 wt. % carbon, 0.5-15 wt. % chromium, 0-5 wt. % molybdenum, less than 2 wt. % manganese and less than 2 wt. % silicon, and the proportion of the carbide-forming additives such as V, Nb, Ti and W compounds in total is 3-20 wt.% and, additionally, the powderized mixture contains not more than 50 wt. % ceramic particulates in which the proportion of a metallic binder is not greater than 30 wt. %, the rest of the composition comprising impurities or trace amounts of different additives.

Claim 6. (Currently Amended) A multimaterial part manufactured according to ~~any of the claims 1-5~~ claim 1 whose composition includes at least a tough ferrous (Fe > 50 wt. %) material component (B) combined with a hard, wear-resistant material (A), **characterized in that wherein:**

- the tough material component (B) forms in a workable green body an essentially homogeneous longitudinal structure, whose proportion in the green body cross section is 10-50 vol. %,
- the cross-sectional area of a single fiber of the tough material (B) is greater than 1 mm² average and the minimum dimension in the cross section of a single fiber or in the wall a honeycomb-like tough structure is greater than 0.5 mm, and
- the hardness of the hard material component (A) after heat treatment is not less than HRC 40.

Claim 7. (Currently Amended) The multimaterial part of claim 6, ~~characterized in that~~ wherein the volume proportion of the tough material component (B) in the finished multimaterial part is 20-40 vol. %.

Claim 8. (New) The method of claim 2, wherein the wear-resistant component (A) is a ferrous material (Fe > 50 wt. %) or, alternatively, a mixture of a ferrous material and a ceramic material (carbide, oxide, nitride, boride, etc.) containing not more than 30 wt. % of a metallic binder, whereby the hardness of the material is greater than HRC 35.

Claim 9. (New) The method of claim 1, wherein the wear-resistant component (A) is a ferrous material (Fe > 50 wt. %) or, alternatively, a mixture of a ferrous material and a ceramic material (carbide, oxide, nitride, boride, etc.)

containing not more than 30 wt. % of a metallic binder, whereby the hardness of the material is greater than HRC 50.

Claim 10. (New) The method of claim 2, wherein the wear-resistant component (A) is a ferrous material (Fe > 50 wt. %) or, alternatively, a mixture of a ferrous material and a ceramic material (carbide, oxide, nitride, boride, etc.) containing not more than 30 wt. % of a metallic binder, whereby the hardness of the material is greater than HRC 50.

Claim 11. (New) The method of claim 2, wherein the tough material component (B) is a ferrous (Fe > 50 wt. %) or nickel (Ni > 50 wt. %) based material, whereby the hardness of the material is not greater than HRC 35.

Claim 12. (New) The method of claim 2, wherein the tough material component (B) is a ferrous (Fe > 50 wt. %) or nickel (Ni > 50 wt. %) based material, whereby the hardness of the material is not greater than HRC 25.

Claim 13. (New) The method of claim 3, wherein the tough material component (B) is a ferrous (Fe > 50 wt. %) or nickel (Ni > 50 wt. %) based material, whereby the hardness of the material is not greater than HRC 35.

Claim 14. (New) The method of claim 3, wherein the tough material component (B) is a ferrous (Fe > 50 wt. %) or nickel (Ni > 50 wt. %) based material, whereby the hardness of the material is not greater than HRC 25.

Claim 15. (New) The method of claim 2, wherein the wear-resistant material component (A) is prepared from a powderized raw material in which the chemical composition of the ferrous metallic powder ($\text{Fe} > 50 \text{ wt. } \%$) in the powderized mixture is 0.5-3.5 wt. % carbon, 0.5-15 wt. % chromium, 0-5 wt. % molybdenum, less than 2 wt. % manganese and less than 2 wt. % silicon, and the proportion of the carbide-forming additives such as V, Nb, Ti and W compounds in total is 3-20 wt.% and, additionally, the powderized mixture contains not more than 50 wt. % ceramic particulates in which the proportion of a metallic binder is not greater than 30 wt. %, the rest of the composition comprising impurities or trace amounts of different additives.

Claim 16. (New) The method of claim 3, wherein the wear-resistant material component (A) is prepared from a powderized raw material in which the chemical composition of the ferrous metallic powder ($\text{Fe} > 50 \text{ wt. } \%$) in the powderized mixture is 0.5-3.5 wt. % carbon, 0.5-15 wt. % chromium, 0-5 wt. % molybdenum, less than 2 wt. % manganese and less than 2 wt. % silicon, and the proportion of the carbide-forming additives such as V, Nb, Ti and W compounds in total is 3-20 wt.% and, additionally, the powderized mixture contains not more than 50 wt. % ceramic particulates in which the proportion of a metallic binder is not greater than 30 wt. %, the rest of the composition comprising impurities or trace amounts of different additives.

Claim 17. (New) The method of claim 4, wherein the wear-resistant material component (A) is prepared from a powderized raw material in which the chemical composition of the ferrous metallic powder (Fe > 50 wt. %) in the powderized mixture is 0.5-3.5 wt. % carbon, 0.5-15 wt. % chromium, 0-5 wt. % molybdenum, less than 2 wt. % manganese and less than 2 wt. % silicon, and the proportion of the carbide-forming additives such as V, Nb, Ti and W compounds in total is 3-20 wt.% and, additionally, the powderized mixture contains not more than 50 wt. % ceramic particulates in which the proportion of a metallic binder is not greater than 30 wt. %, the rest of the composition comprising impurities or trace amounts of different additives.

Claim 18. (New) A multimaterial part manufactured according to claim 2 whose composition includes at least a tough ferrous (Fe > 50 wt. %) material component (B) combined with a hard, wear-resistant material (A), wherein:

- the tough material component (B) forms in a workable green body an essentially homogeneous longitudinal structure, whose proportion in the green body cross section is 10-50 vol. %,
- the cross-sectional area of a single fiber of the tough material (B) is greater than 1 mm² average and the minimum dimension in the cross section of a single fiber or in the wall a honeycomb-like tough structure is greater than 0.5 mm, and
- the hardness of the hard material component (A) after heat treatment is not less than HRC 40.

Claim 19. (New) A multimaterial part manufactured according to claim 3 whose composition includes at least a tough ferrous ($\text{Fe} > 50 \text{ wt. \%}$) material component (B) combined with a hard, wear-resistant material (A), wherein:

- the tough material component (B) forms in a workable green body an essentially homogeneous longitudinal structure, whose proportion in the green body cross section is 10-50 vol. %,
- the cross-sectional area of a single fiber of the tough material (B) is greater than 1 mm^2 average and the minimum dimension in the cross section of a single fiber or in the wall a honeycomb-like tough structure is greater than 0.5 mm, and
- the hardness of the hard material component (A) after heat treatment is not less than HRC 40.

Claim 20. (New) A multimaterial part manufactured according to claim 4 whose composition includes at least a tough ferrous ($\text{Fe} > 50 \text{ wt. \%}$) material component (B) combined with a hard, wear-resistant material (A), wherein:

- the tough material component (B) forms in a workable green body an essentially homogeneous longitudinal structure, whose proportion in the green body cross section is 10-50 vol. %,
- the cross-sectional area of a single fiber of the tough material (B) is greater than 1 mm^2 average and the minimum dimension in the cross section of a single fiber or in the wall a honeycomb-like tough structure is greater than 0.5 mm, and

- the hardness of the hard material component (A) after heat treatment is not less than HRC 40.

Claim 21. (New) A multimaterial part manufactured according to claim 5 whose composition includes at least a tough ferrous ($\text{Fe} > 50 \text{ wt. \%}$) material component (B) combined with a hard, wear-resistant material (A), wherein:

- the tough material component (B) forms in a workable green body an essentially homogeneous longitudinal structure, whose proportion in the green body cross section is 10-50 vol. %,
- the cross-sectional area of a single fiber of the tough material (B) is greater than 1 mm^2 average and the minimum dimension in the cross section of a single fiber or in the wall a honeycomb-like tough structure is greater than 0.5 mm, and
- the hardness of the hard material component (A) after heat treatment is not less than HRC 40.